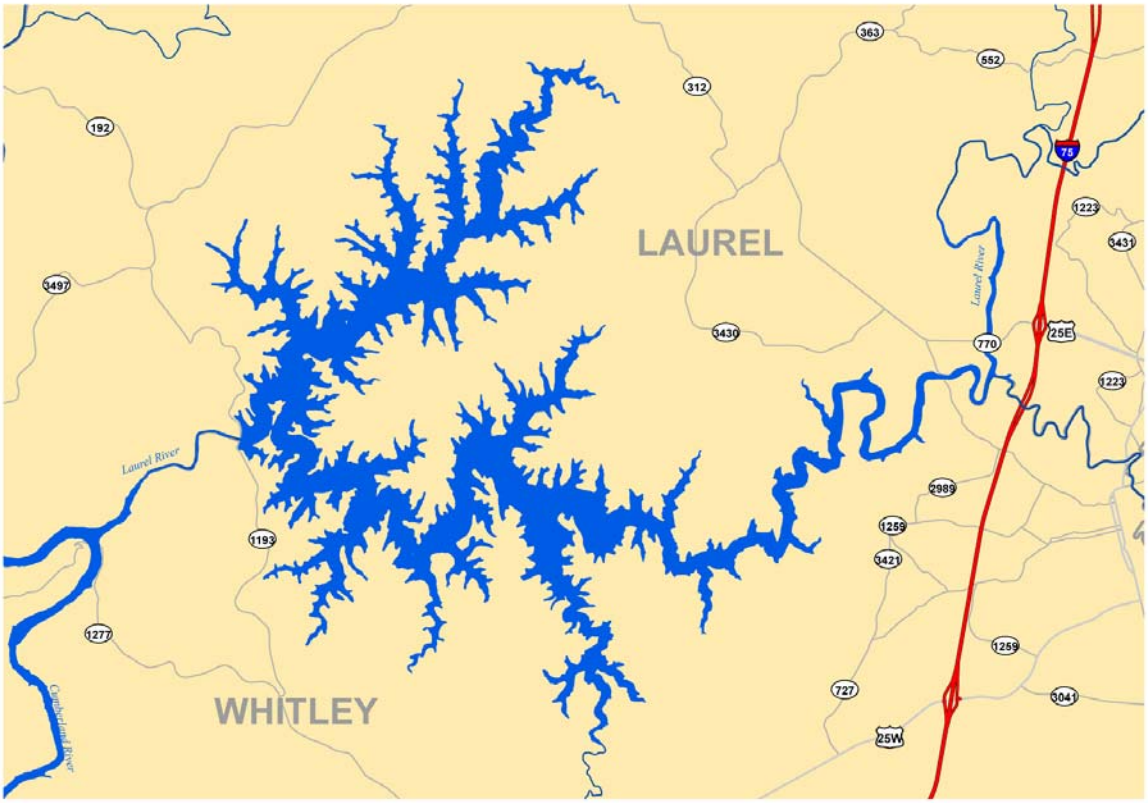
Laurel River Lake Bass Assessment 2007

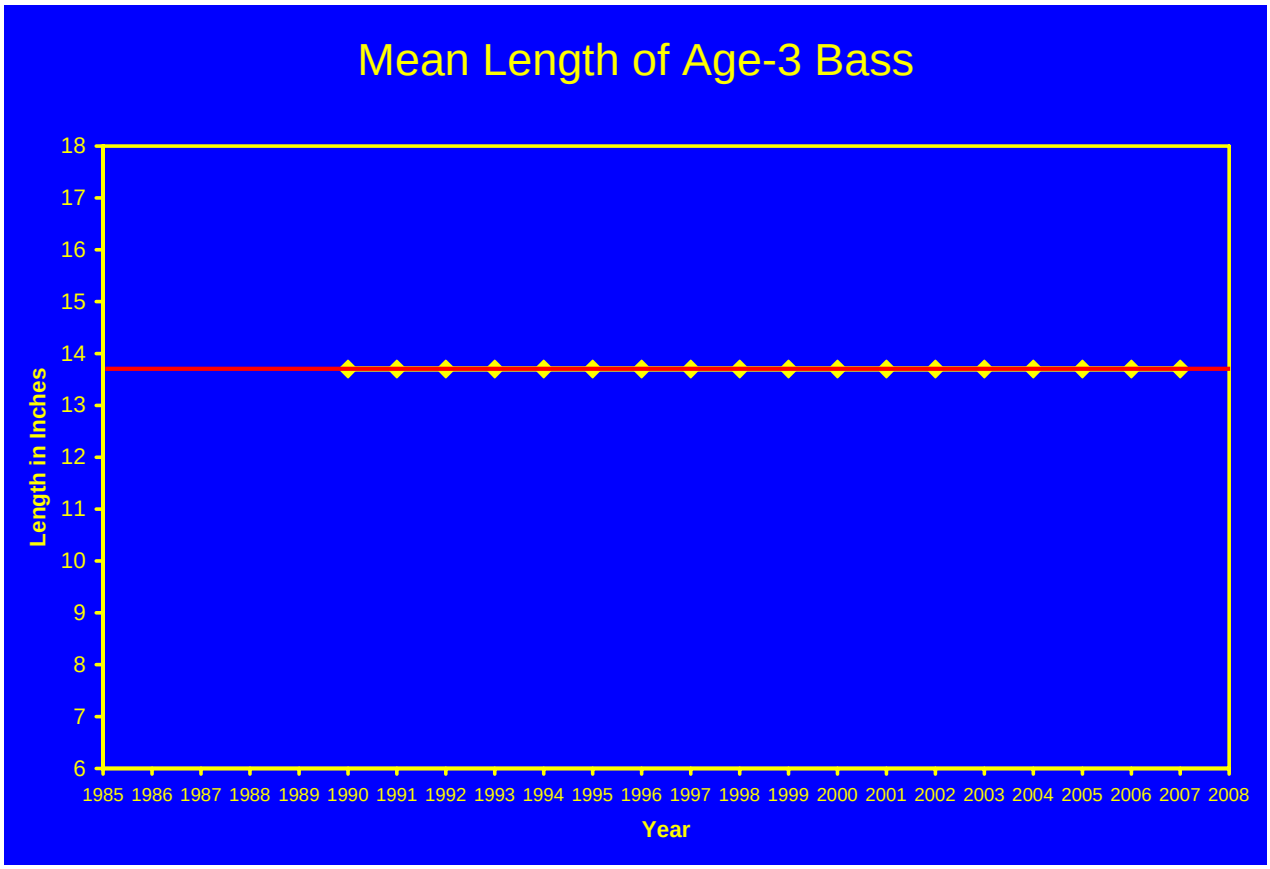
Laurel River Lake is a U.S. Army Corps of Engineers mainstem reservoir located on the Laurel River in Laurel and Whitley counties in southeastern Kentucky. This 5,600-acre lake (average recreational pool, 1012 ft elevation) was impounded in 1974 with the completion of Laurel Dam (located at Laurel River mile 2.8). This deep, clear reservoir lies within the Daniel Boone National Forest and is a popular fishing and boating destination for numerous visitors each year. The majority of the lake is considered infertile (oligotrophic), however, the upper Laurel River arm is highly fertile (eutrophic).

Laurel River Lake contains three black bass species: largemouth, spotted, and smallmouth bass. According to the most recent creel survey in 2006, largemouth bass comprise about 37% of the black bass catch in the lake. Although largemouth bass can be found throughout the lake, they are most concentrated in the fertile upper Laurel River Arm.



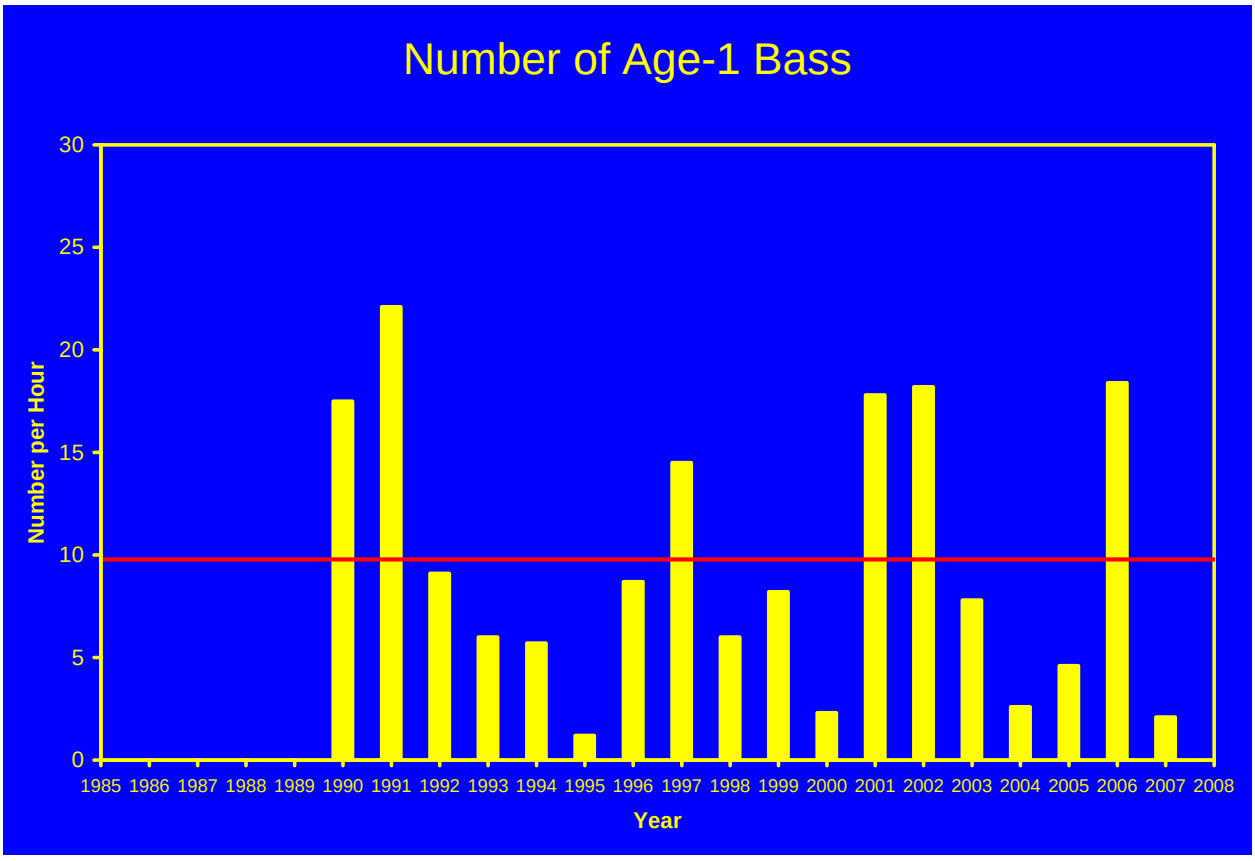
Parameter 1 – Length at age-3 (growth rate)

At Laurel River Lake, the length of an age-3 largemouth bass averaged 13.7 inches in 2003 (represented by the red line). When compared to other lakes of this size, this is considered to be excellent growth for largemouth bass. Largemouth bass will be aged again in 2008 to determine if growth rates have changed.



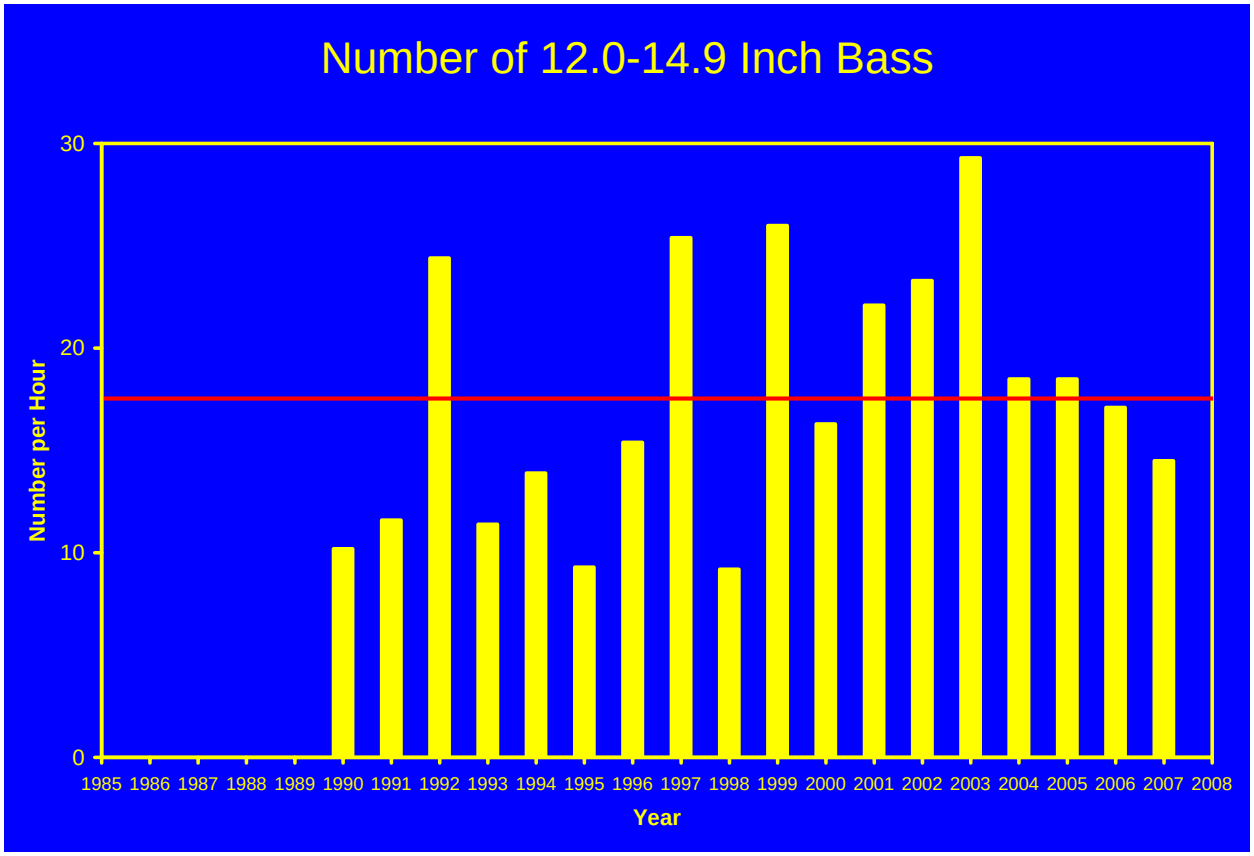
Parameter 2 – Numbers of age-1 bass (how good the spawn was)

KDFWR looks at the spring electrofishing catch rates of age-1 largemouth bass to assess the success of the spawn that occurred in the prior year. For example, the age-1 catch rate in 2004 would represent the 2003 year-class. This is an important parameter because the number of bass produced represents how good the fishing will be once these fish grow large enough for anglers to catch. At Laurel River Lake, age-1 largemouth bass catch rates have fluctuated widely and have averaged 9.6 fish per hour of electrofishing. When compared to other lakes of this size, the average catch rate of age-1 bass at Laurel River Lake is considered to be relatively low. Supplemental stockings of young largemouth bass occurred in fall 2005 and 2006 to bolster weak spawns. The fall 2005 stocking was effective, as stocked fish were numerous in the spring 2006 sample and contributed to the higher than average catch in 2006. The 2006 stocking was less effective and did not significantly improve the poor 2006 year-class.



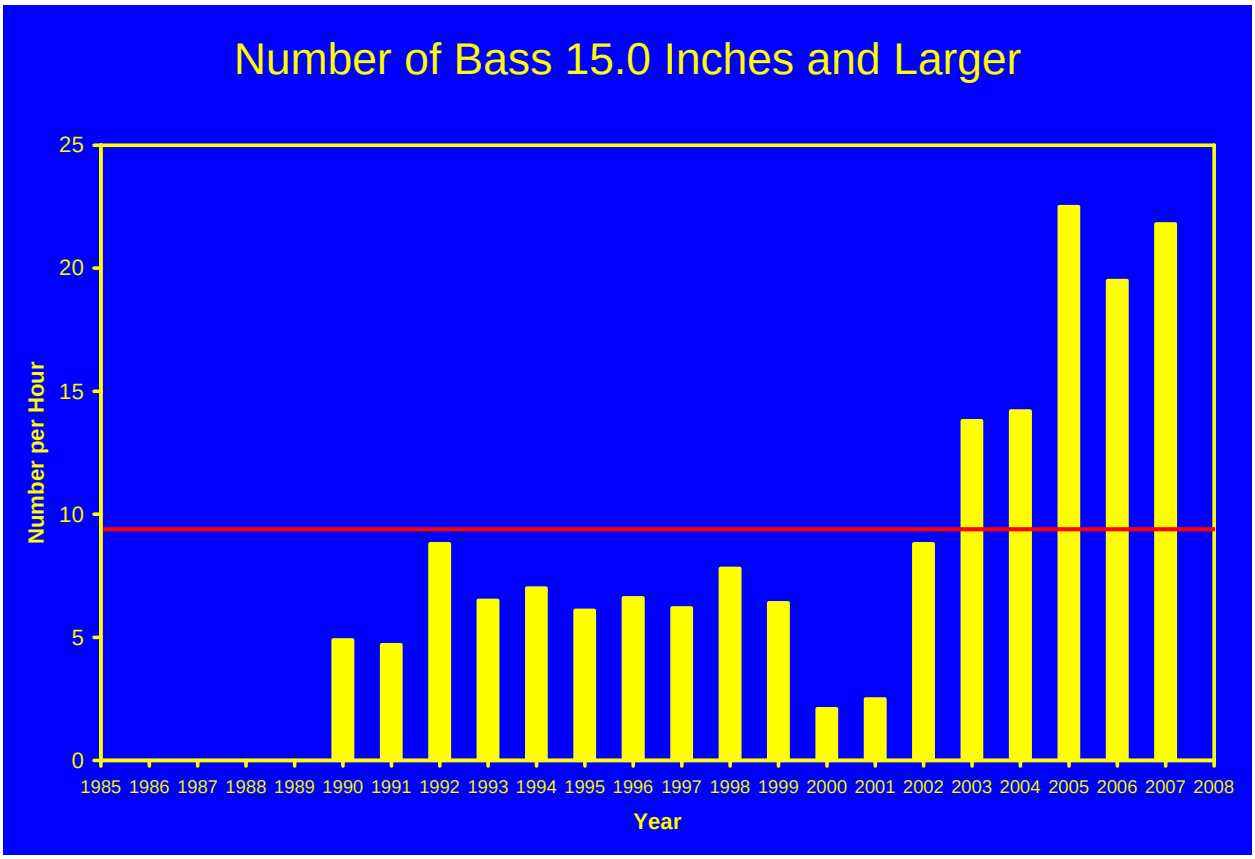
Parameter 3 – Numbers of 12.0-14.9 inch bass

The electrofishing catch of 12.0-14.9 inch largemouth bass has averaged 17.6 fish/hour over the years at Laurel River Lake, which is considered fair for lakes of its size. The catch rate peaked in 2003 and has declined slightly since then. Although the catch rate for 12.0-14.9 inch bass has declined since 2003, it appears these fish have moved into the larger size groups, since catch rates of larger fish has increased.



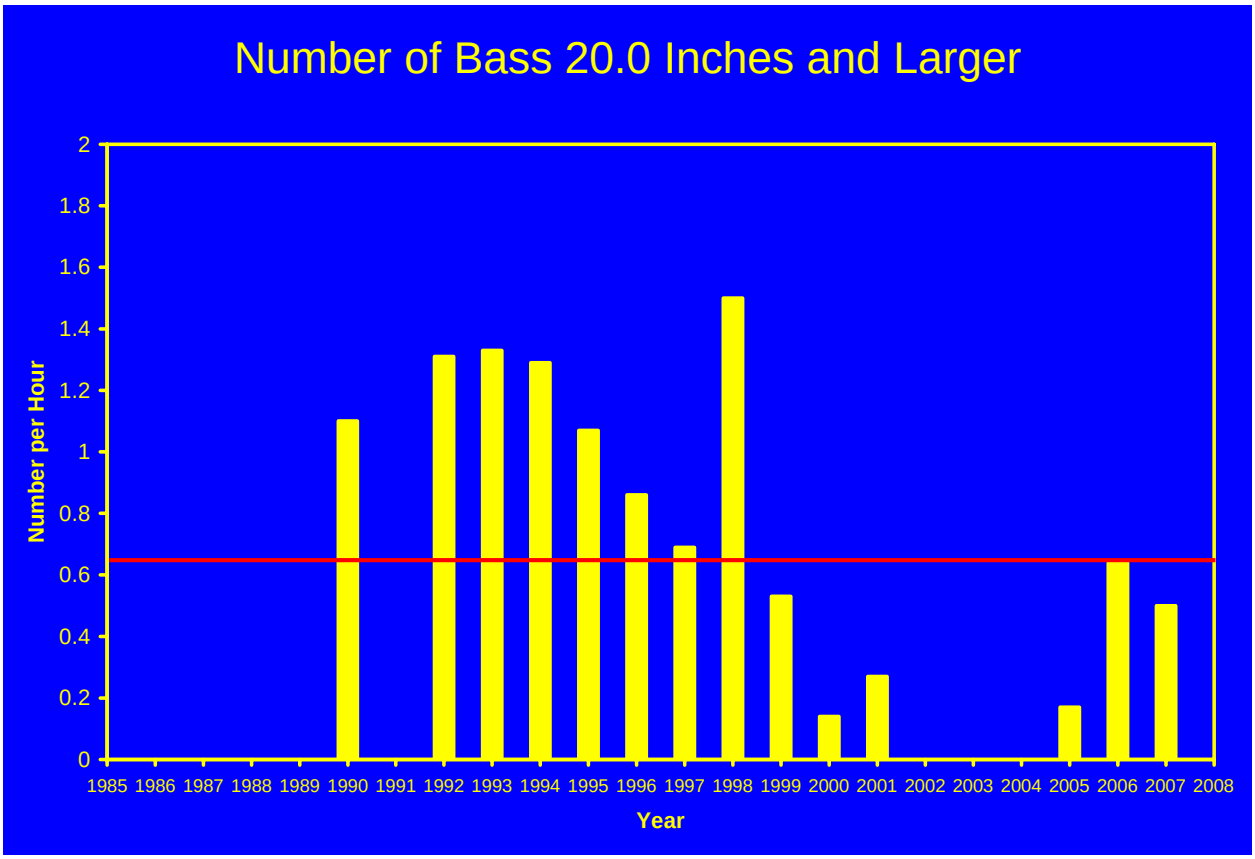
Parameter 4 – Numbers of 15.0 inch and larger bass

The catch rate of 15.0 inch and larger largemouth bass at Laurel River Lake has averaged 9.5 fish/hour of electrofishing and has increased significantly in the last several years. This trend bodes well for the future, as anglers should be able to enjoy good fishing for quality largemouth for the next several years.



Parameter 5 – Numbers of 20.0 inch and larger bass

The electrofishing catch of 20.0 inch and larger largemouth bass has averaged about 0.6 fish/hour for Laurel River Lake since 1990. The catch rate of these larger fish bottomed out in the early 2000's but appears to have improved slightly in recent years.



Overall – Total Assessment Score (All five parameters added together)

Overall, the largemouth bass fishery at Laurel River Lake has averaged a fair rating (10.6) over the past 18 years. The largemouth bass population at this lake has been fairly consistent for the past 18 years. Since 2005, the rating has improved slightly, largely due to the increased catch of harvestable size fish (parameters 4 and 5).